

REMARKS

The Applicant has carefully considered the rejections raised in the Office Action dated February 9, 2005. As a result, claims have been amended to comply with the Examiner's requirements, as outlined herebelow:

The status of claims 1-13 and 34-65 has been revised to read "cancelled" for the purpose of being consistent with the response filed on December 4, 2003. Applicant submits that the cancellation of these claims has been made without prejudice to the Applicant's right to file a divisional application at a later date.

The Examiner has objected to claims 14-33 and 66-70 as being indefinite. Accordingly, independent claims 14 and 68 have been amended to more clearly and specifically recite which diffraction patterns is being referred to. Specifically claims 14 and 68 have been amended to recite:

"wherein each pre-selected pattern, when bound to an analyte, gives rise to a pre-selected-diffraction pattern distinct from diffraction patterns formed from all other unbound and bound pre-selected patterns on the surface" as suggested by the Examiner. This amendment is supported on page 9, lines 17 to 21. It is also supported on page 17, lines 11 to 29 where it is disclosed that the pre-selected patterns themselves may be diffracting whether or not they have analyte species bound to them.

The description on pages 5 6 containing the Summary of Invention have been amended to reflect the amendments to the independent claims 1 and 68 and new independent claim 71.

On page 8 of the Action (paragraph 29), the Examiner has deemed claim 22 as allowable if rewritten to include all the limitations of the rejected base and any intervening claims. New claim 71 has been added which combines the subject matter of claims 14 and 22. New dependent claims 72 to 85 are similar to claims 15 to 21, 25 to 27 and 31 to 33.

Patentability of the Claims Over the Cited References

Claims 14, 15, 17-21, 23-24, 27, 29-32, 66 and 68-70 have been rejected under 35 U.S.C. § 103(a) as being anticipated by the reference United States Patent No. 5,512,131 issued to Kumar et al. Reconsideration of the grounds for the obviousness rejections under 35 U.S.C. § 103(a) is respectfully solicited for the following reasons.

As discussed in the last response, (Kumar) it is directed to a method of stamping a pattern onto a surface using an elastomeric stamp coated with a self-assembling monolayer forming species having a functional group attached thereto for binding particular materials. The Examiner, while noting that Kumar does not disclose the subject matter of claim 14, has found that it lacks inventiveness over Kumar and has referred to column 2, line 3-20, column 3, lines 21-30, column 11, lines 64 to column 12, line 9, and columns 16, lines 26-30 as referring to features which disclose the subject matter of claim 14. Applicants have carefully reviewed these sections in addition to the entirety of Kumar and respectfully submit that nowhere in this reference is there a teaching of the subject matter of claim 14. Particularly, the feature of claim 1:

wherein each of said pre-selected patterns on said surface is distinct and gives rise to a pre-selected diffraction pattern distinct from diffraction patterns formed from all other pre-selected patterns on the surface whether or not analytes are bound to said pre-selected patterns;

is, in addition to not being disclosed in Kumar, is not suggested at all and would not lead one of ordinary skill in the art to the subject matter of present claims 1 and 68. Further, the only apparent reference to diffraction patterns in Kumar is at column 16, lines 26 to 30.

The Examiner has asserted that the disclosure of Kumar in column 20, lines 5-20 and Figure 6 renders the subject matter of claims 1 and 68 obvious

over Kumar. Specifically, the passage referred to by the Examiner shows different patterns in Figs. 6(a), 6(c), 6(e) and 6(f), and the corresponding diffraction patterns resulting as shown in Fig. 6(b), 6(d), 6(f) and 6(g) respectively.

Applicants submit that it is well known that different patterns exist (i.e., known fact in optics), it is also known that different patterns can be made (e.g., microcontact printing, photolith) and it is further well known that different analytes can be used (e.g., there are many examples of assays). However, Applicants assert that what is not obvious is that these can be simultaneous - that is one can make different patterns to detect different analytes simultaneously, even within the same region of space. This simultaneity is important because it means (1) one can detect multiple analytes at the same time and same sample; and (2) it's a way of showing specificity - that is, analyte A only binds to receptor on pattern A', and not to that on pattern B'.

Thus, while Kumar shows a combination of three species in one grating producing a single image, nowhere in Kumar is it taught or even suggested that multiple patterns can be read simultaneously and independently. Had it been obvious, Applicants are of the opinion that it would have been disclosed since the concept of simultaneous, independent analysis is highly advantageous.

Therefore, Applicants submit that this disclosure of Kumar does not in any way suggest or point those of ordinary skill in the art to the subject matter of claim 14, and particularly the subject matter:

*“and detecting, at a position spaced from the substrate surface, an image of diffracted light from the substrate surface **and analysing the image of diffracted light for presence of one or more of the pre-selected diffraction patterns representative of binding of one or more analytes to their associated pre-selected pattern of analyte-specific receptors**”*

is simply not suggested by Kumar.

Claim 16 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumar et al. in view of Yguerabide et al. (US Patent No. 6,586,193). Claim 25 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumar et al. in view of Sandstrom et al. (US Patent No. 5,494,829). Claim 26 and 33 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumar et al. in view of Everhart et al. (US Patent No. 6,060,256). Claim 28 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Kumar et al. in view of Bouma et al. (US Patent No. 5,585,242).

In view of the above comments with respect to the patentability of claims 14 to 33 and 66 to 70, Applicants respectfully request withdrawal of these further rejections for the same reasons. Since claim 22 has been indicated as being allowable, Applicants respectfully submit that new claims 71 to 85 are also allowable, in which claim 71 combines the subject matter of claims 14 and 22.

In view of the foregoing amendments, Applicant submits that the claims now define the subject matter which is new and inventive over the prior art of the record.

It is respectfully submitted that the amendments made herein are to more particularly and succinctly recite the claimed invention. All the amendments are supported by the application as originally filed, and therefore no new matter has been added.

An earnest effort has been made to place this application in condition for allowance which action is respectfully solicited.

Should the Examiner have any questions or require anything further, it would be appreciated if the Examiner would contact the undersigned attorney-of-record at the telephone number shown below for further expediting the prosecution of the application.

Respectfully submitted,

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